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EXAMINER
THOMAS, J

ART UNIT	PAPER NUMBER
2747	12

DATE MAILED: 06/06/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

X Responsive to communication(s) filed on _Mar 17, 2000_

X This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire __3 (THREE)__ month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

X Claim(s) _1-4 and 6-21_ are pending in the applicat

☐ Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

X Claim(s) _1-4 and 6-21_ is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

    ☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

        ☐ received.

        ☐ received in Application No. (Series Code/Serial Number) _____ .

        ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    *Certified copies not received: _____

X Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

X Information Disclosure Statement(s), PTO-1449, Paper No(s). ___14___

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

DETAILED ACTION

Notice to Applicant

1. This communication is in response to the amendment filed 3/17/00. Claims 1-4 and 6-20 remain pending. Claims 1 and 11 have been amended. Claim 5 has been canceled. Claim 21 is newly added.

Drawings

2. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-4 and 6-21 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Lakritz (5,586,198) in view of Kumai, et

al. (5,634,134) and Freeman (5,649,223).

(A)   As per amended claim 1, Lakritz discloses a method and

apparatus for identifying characters in an ideographic alphabet

(Lakritz; abstract), comprising:

a mouse (25) (reads on "means for input") for dragging and

selecting from the group consisting of a stroke, a radical (reads

on "component"), and a character that match a specified criteria

(Lakritz; col. 5, line 61 to col. 6, line 18 and col. 6, line 66

to col. 7, line 9) as well as a selection window (14) having a

scrollable display of ideographic strokes, radicals, and/or

characters for the user to select (Lakritz; col. 7, line 66 to

col. 8, line 15);

a database (30) that encodes and stores a graphical

representation of each individual character in a character set of

an ideographic language, such as Chinese (Lakritz; col. 4, lines

29-32; col. 7, lines 14-34; col. 10, lines 1-30; col. 11, lines

51-53; and col. 12, lines 46-48);

a backend processor (22) that enables the user to manipulate

characters from the encoding database (30) on a canvas (12)

according to sectors and strokes and to store them for easy

access and retrieval from a character set shown on the display

screen (24) or registered on the palette (10) (Lakritz; col. 6,

line 51 to col. 10, line 30; and figs. 4-9); and

a display screen (24) having a palette (10) and a canvas (12) on which radicals and strokes are positioned and edited (Lakritz; col. 5, lines 34 to col. 60 and col. 6, lines 19-50 and fig. 4), wherein actions on the canvas queries the database and brings up a list of matching characters on the screen which can be further limited by specifying qualifying parameters (Lakritz; col. 5, line 62 to col. 6, line 4 and col. 7, line 35 to col. 8, line 38).

As per the storage of data related to Chinese characters including (1) the identification and order of strokes used to write characters; (2) the frequency of occurrence of each character; and (3) the orthographic components of characters, Lakritz's palette (10) of 82 radicals are arranged (i.e., classified) according to the number of strokes. The individual strokes are arranged in a matrix and placed in a separate cell. The number of strokes is utilized as a filter to specify parameters to constrain a search for ideographic characters (Lakritz; col. 6, line 66 to col. 7, line 13 and col. 7, lines 35-39). Lakritz further discloses assigning radical IDs and sector numbers for indicating the position information of an ideographic character (Lakritz; col. 9, lines 5-67). Lakritz fails to specifically teach the use of frequency of occurrence of a character as a first character, *per se*. However, frequency of

occurrence is a well-known parameter for determining the

likelihood of an ideographic character, as evidenced by Kumai.

Please see col. 10, line 6 to col. 17, line 15 of Kumai.   In

addition, Freeman discloses the inputting of consonant-vowel

letter of sound combinations (reads on "orthographic components")

as well as the number of strokes, radicals, and starting strokes

of ideographic characters.   Further, Freeman suggests the use of

sets of likely next words as a follow-up to inputs for text

entry, since the Chinese language has few inflections (Freeman;

col. 16, line 52 to col. 17, line 2).

One having ordinary skill in the art at the time of the

invention would have found it obvious to include the above

teachings disclosed by Kumai and Freeman within Lakritz's system

with the motivation of judging the likelihood values of user-

input keys and carrying out processing based on the result of the

judgment so that the result intended by the user is obtained

(Kumai; col. 4, lines 4-26) and of guiding the user or the

beginner to inputs for any letter/character/word in a language,

thereby minimizing the number of inputs required (Freeman; col.

5, lines 56-58).

(B) As per claims 2-4 and 14, Lakritz fails to teach the use of

a touch screen and/or a virtual keyboard.   However, these input

devices are well known in the text processing arts, as evidenced

by Freeman. In particular, Freeman discloses the use of inputs

systems such as a keyboard, a touch sensitive screen, and a

virtual keyboard to enter in text in languages such as Chinese,

Japanese, and other non-alphabetic languages (Freeman; col. 1,

lines 23-31; col. 7, lines 15-40; col. 16, line 52 to col. 17,

line 2; col. 19, lines 41-53; col. 22, line 54 to col. 23, line

59). As per the recitation of a more key and a wild card key,

note Freeman's teachings with respect to a satellite keys and

reference keys (Freeman; col. 15, line 24 to col. 16, line 4),

and particularly as it applies to inputting text in languages

such as Chinese, Japanese, and other non-alphabetic languages

(Freeman; col. 16, line 52 to col. 17, line 2).

One having ordinary skill in the art at the time of the

invention would have found it obvious to include the input

devices disclosed by Freeman within Lakritz's system with the

motivation of enabling rapid and easy input of text and/or data

for any application, for people without keyboard skills as well

as for people with typing skills (Freeman; col. 3, lines 43-55

and col. 5, lines 49-55).

(C) As per claim 6, Lakritz's palette (10) of 82 radicals are

arranged (i.e., classified) according to the number of strokes.

The individual strokes are arranged in a matrix and placed in a

separate cell. The number of strokes is utilized as a filter to

specify parameters to constrain a search for ideographic

characters (Lakritz; col. 6, line 66 to col. 7, line 13 and col.

7, lines 35-39). Lakritz further discloses assigning radical IDs

and sector numbers for indicating the position information of an

ideographic character (Lakritz; col. 9, lines 5-67). Lakritz

fails to specifically teach the use of frequency of occurrence of

a character as a first character. However, frequency of

occurrence is a well-known parameter for determining the

likelihood of an ideographic character, as evidenced by Kumai.

Please see col. 10, line 6 to col. 17, line 15 of Kumai. In

addition, Freeman discloses the inputting of consonant-vowel

letter of sound combinations (reads on "orthographic components")

as well as the number of strokes, radicals, and starting strokes

of ideographic characters. Further, Freeman suggests the use of

sets of likely next words as a follow-up to inputs for text

entry, since the Chinese language has few inflections (Freeman;

col. 16, line 52 to col. 17, line 2).

One having ordinary skill in the art at the time of the

invention would have found it obvious to include the teachings

disclosed by Kumai and Freeman within Lakritz's system with the

motivation of judging the likelihood values of user-input keys

and carrying out processing based on the result of the judgment

so that the result intended by the user is obtained (Kumai; col.

4, lines 4-26) and of guiding the user or the beginner to inputs

for any letter/character/word in a language, thereby minimizing

the number of inputs required (Freeman; col. 5, lines 56-58).

(D) As per claims 7-10, Lakritz clearly teaches that strokes are

combined to form radicals, and that radicals in turn form

characters and that radicals are arranged by number of strokes

(Lakritz; col. 6, line 66 to col. 7, line 20). Lakritz further

discloses an analysis engine that analyzes radicals according to

attribute filters and outputs a set of ideographic characters

that match the given constraints, wherein the analysis engine can

recognize partial characters from a minimum combination of

character radicals (Lakritz; col. 8, lines 38-50). As per the

recitation of orthographic components, Freeman discloses the

inputting of consonant-vowel letter of sound combinations (reads

on "orthographic components") as well as the number of strokes,

radicals, and starting strokes of ideographic characters.

As per the use of the "frequency of occurrence" and

"cumulative frequencies", note the teachings of Kumai with

respect to judging the likelihood values of user-input keys

and/or the frequency of occurrence of characters and carrying out

processing based on the result of the judgment so that the result

intended by the user is obtained (Kumai; col. 4, lines 4-26 and

col. 10, line 6 to col. 17, line 15). In addition, Lakritz

suggests adjusting focus, grade, and filters to further constrain

the search for a desired character according to user preferences (Lakritz; col. 10, line 41 to col. 11, line 4 and col. 11, line 11, lines 36-43). Furthermore, Lakritz provides the user flexibility in self registering radicals, thereby enabling the operator to customize his use of characters (Lakritz; col. 7, lines 53-65).

The motivation for combining the respect teachings of Lakritz, Kumai, and Freeman, is as given above in the rejection of amended claim 1, and incorporated herein.

(E) As per amended claim 11, Lakritz teaches inputting Chinese characters into a word processor or other application program of a machine, comprising the steps of:

(a) inputting an initial radical (reads on "selection") (Lakritz; col. 5, line 54 to col. 6, line 4);

(b) displaying a list of matching characters or radicals on screen for the user's review (Lakritz; col. 5, line 54 to col. 6, line 4);

(c) selecting a character or radical or a further stroke until the entire character is formed (Lakritz; col. 6, lines 5-18 & 33-51); and

(d) repeating the above steps until the specific or complete form of the desired character is constructed (Lakritz; col. 6, lines 5-18 and col. 10, lines 1-30), wherein an analysis engine

analyzes radicals according to attribute filters and outputs a
set of ideographic characters that match the given constraints
and even recognizes partial characters (reads on "non-word
associated" characters) from a minimum combination of character
radicals (Lakritz; col. 8, lines 38-50).

It is not clear from Lakritz whether or not the initial
radical (or other further selected radicals) selected by the user
comprises one of a displayed component, stroke, and wildcard, *per
se*. However, Lakritz's palette (10) of 82 radicals are arranged
(i.e., classified) and displayed according to the number of
strokes. The individual strokes are arranged in a matrix and
placed in a separate cell. The number of strokes is utilized as
a filter to specify parameters to constrain a search for
ideographic characters (Lakritz; col. 6, line 66 to col. 7, line
13 and col. 7, lines 35-39). Lakritz further discloses assigning
radical IDs and sector numbers for indicating the position
information of an ideographic character (Lakritz; col. 9, lines
5-67).

Moreover, the frequency of occurrence is a well-known
parameter for determining the likelihood of an ideographic
character, as evidenced by Kumai. Please see col. 10, line 6 to
col. 17, line 15 of Kumai. In addition, Freeman discloses the
inputting of consonant-vowel letter of sound combinations as well
as the number of strokes, radicals, and starting strokes of

ideographic characters. Further, Freeman suggests the use of

sets of likely next words as a follow-up to inputs for text

entry, since the Chinese language has few inflections (Freeman;

col. 16, line 52 to col. 17, line 2).

One having ordinary skill in the art at the time of the

invention would have found it obvious to include the above

teachings disclosed by Kumai and Freeman within Lakritz's system

with the motivation of judging the likelihood values of user-

input keys and carrying out processing based on the result of the

judgment so that the result intended by the user is obtained

(Kumai; col. 4, lines 4-26) and of guiding the user or the

beginner to inputs for any letter/character/word in a language,

thereby minimizing the number of inputs required (Freeman; col.

5, lines 56-58).

Further, insofar as Applicant recites "comprising one of a

displayed component, stroke, and wildcard" at steps (a) and (c)

of claim 11, it is irrelevant whether or not Lakritz, Kumai, and

Freeman also disclose wildcards to represent character

selections, *per se*, since Applicant uses alternative limitations

in reciting the claim.

(F) As per claim 12, Lakritz fails to expressly disclose the

automatic appending of a word separator upon selection of a

character. However, this is well known in the art, as evidenced

by Freeman. In particular, Freeman teaches that "selected words,

with or without inflections, are outputted by input actions which

may append 'Space' or other punctuation endings" (Freeman;

abstract, lines 13-17 and col. 5, lines 6-18).

The motivation for combining the respective teachings of

Lakritz and Freeman is as given above in the rejection of amended

claim 1 and in the rejection of claims 2-4 and 14, and

incorporated herein.

(G) Method claims 13 and 15-20 repeats the apparatus elements

recited in claims 1 and 6-10, respectively. As the features of

claims 1 and 6-10 have been shown to be taught by or obvious in

view of Lakritz, Kumai, and Freeman, it is readily apparent that

the apparatus disclosed by Lakritz, Kumai, and Freeman, performs

the recited underlying functions. As such, these limitations are

rejected for the same reasons given above for apparatus claims 1

and 5-10.

(H) As per newly added claim 21, Lakritz's palette (10) of 82

radicals are arranged (i.e., classified) according to the number

of strokes. The individual strokes are arranged in a matrix and

placed in a separate cell. The number of strokes is utilized as

a filter to specify parameters to constrain a search for

ideographic characters (Lakritz; col. 6, line 66 to col. 7, line

13 and col. 7, lines 35-39). Lakritz further discloses assigning

radical IDs and sector numbers for indicating the position

information of an ideographic character (Lakritz; col. 9, lines

5-67). As such, it is readily apparent that Lakritz uses stroke

numbers, radical ID's, and sector numbers as indicators of a

character's membership within various subsets of Chinese

characters.

Response to Arguments

5.   Applicant's arguments filed 3/17/00 have been fully

considered but they are not persuasive. Applicant's arguments

will be addressed hereinbelow in the order in which they appear

in the response filed 3/17/00.

(A) At pages 7-8 of the 3/17/00 response, Applicant argues the

rejections of claims 1, 11 and 13 under 35 U.S.C. 102(e) by

Lakritz.

In response, this argument is moot as the Examiner has

withdrawn the rejection under 35 U.S.C. 102(e).

(B) At pages 9-14 of the 3/17/00 response, Applicant argues the

rejections made under 35 U.S.C. 103 based on the teachings of

Lakritz, Freeman, and Kumai, and addresses each reference

separately in a piecemeal manner.

In response to Applicant's arguments against the references

individually, one cannot show nonobviousness by attacking

references individually where the rejections are based on

combinations of references. See *In re Keller*, 642 F.2d 413, 208

USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231

USPQ 375 (Fed. Cir. 1986).

In addition, the test for obviousness is not whether the

features of a secondary reference may be bodily incorporated into

the structure of the primary reference; nor is it that the

claimed invention must be expressly suggested in any one or all

of the references. Rather, the test is what the combined

teachings of the references would have suggested to those of

ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208

USPQ 871 (CCPA 1981).

Further, Applicant's remarks at page 12 of the 3/17/00 with

regard to Freeman's concept of inflection codes to decompose

Chinese characters as being "flawed" and "invalid" appears to

lack evidence, especially when considering Freeman's statements

at col. 16, line 52 to col. 17, line 2 of Freeman. In

particular, 37 CFR 1.111(b) states, "A general allegation that

the claims define a patentable invention without specifically

pointing out how the language of the claims patentably

distinguishes them from the reference does not comply with the

requirements of this section." Also, <u>arguments or conclusions of</u>

Attorney cannot take the place of evidence. *In re Cole*, 51 CCPA

919, 326 F.2d 769, 140 USPQ 230 (1964); *In re Schulze*, 52 CCPA

1422, 346 F.2d 600, 145 USPQ 716 (1965); *Mertizner v. Mindick*,

549 F.2d 775, 193 USPQ 17 (CCPA 1977).

In response to Applicant's argument that the references fail

to show certain features of Applicant's invention, it is noted

that the features upon which Applicant relies (i.e., creating

ideographical data using the minimal keypad and minimal display

found in a wireless phone; the limited display area of a cell

phone; the use of sub-particles of Radicals or BuShou; and the

use of Han character set) are not recited in the rejected

claim(s). Although the claims are interpreted in light of the

specification, limitations from the specification are not read

into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26

USPQ2d 1057 (Fed. Cir. 1993). Furthermore, the examples relied

on by Applicant as distinctions over the applied prior art in the

3/17/00 response fail to provide a clear nexus to the recited

claim limitations. For example, Applicant's remarks with respect

to the break-up of the word "commentary" at the paragraph

bridging pages 10-11 of the 3/17/00 response and the

unavailability of the character "yi" at the first full paragraph

of page 12 of the 3/17/00 response appear to be disassociated

from Applicant's invention, as presently claimed. In other

words, what specific claim language does Applicant rely on to

avoid the alleged problems of the prior art, such as "commentary" and the "yi" character?

Furthermore, the Examiner recognizes that references cannot be arbitrarily altered or modified and that there must be some reason why one skilled in the art would be motivated to make the proposed modifications. And although the motivation or suggestion to make modifications must be articulated, it is respectfully submitted that there is no requirement that the motivation to make modifications must be expressly articulated within the references themselves. References are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures, *In re Bozek*, 163 USPQ 545 (CCPA 1969). The issue of obviousness is not determined by what the references expressly state but by what they would reasonably suggest to one of ordinary skill in the art, as supported by decisions in *In re DeLisle* 406 Fed 1326, 160 USPQ 806; *In re Kell, Terry and Davies* 208 USPQ 871; and *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ 2d 1596, 1598 (Fed. Cir. 1988) (citing *In re Lalu*, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1988)). Further, it was determined in *In re Lamberti et al*, 192 USPQ 278 (CCPA) that:

(i)   obviousness does not require absolute predictability;

(ii) non-preferred embodiments of prior art must also be considered; and

(iii) the question is not express teaching of references,

but what they would suggest.

According to *In re Jacoby*, 135 USPQ 317 (CCPA 1962), the

skilled artisan is presumed to know something more about the art

than only what is disclosed in the applied references.   In *In re*

Bode, 193 USPQ 12 (CCPA 1977), every reference relies to some

extent on knowledge of persons skilled in the art to complement

that which is disclosed therein.

According to *Ex parte Berins*, 168 USPQ 374 (Bd. Appeals),

there is no statutory limitation as to the number of references

that may be used to demonstrate obviousness...not what references

expressly state but what they would reasonably suggest to one of

ordinary skill in the art.   In *In re Conrad*, 169 USPQ 170 (CCPA),

obviousness is not based on express suggestion, but what

references taken collectively would suggest.

In the instant case, the Examiner respectfully notes that

each and every motivation to combine the Lakritz, Kumai, and

Freeman references is accompanied by select portions of the

respective reference(s) which specifically support that

particular motivation. As such, it is NOT seen that the

Examiner's combination of references is unsupported by the

applied prior art of record. Rather, it is respectfully

submitted that explanation based on the logic and scientific

reasoning of one ordinarily skilled in the art at the time of the

invention that support a holding of obviousness has been

adequately provided by the motivations and reasons indicated by

the Examiner, *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. &

Inter., 4/22/93).

In addition, the newly added limitations which Applicant

disputes as missing in the applied reference has been fully

addressed by the Examiner as either being fully disclosed or

obvious in view of the collective teachings of Lakritz, Kumai,

and Freeman based on the logic and sound scientific reasoning of

one ordinarily skilled in the art at the time of the invention,

as detailed in the remarks and explanations given in the

preceding sections of the present Office Action, and incorporated

herein. One cannot show nonobviousness by attacking references

individually where the rejections are based on combinations of

references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA

1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir.

1986).

As such, it is respectfully submitted that Applicant appears

to view the applied references, separately and in a vacuum,

<u>without considering the knowledge of average skill in the art</u>,

and further fails to appreciate the breadth of the claim language

that is presently recited.

Conclusion

6.   Applicant's amendment necessitated the new ground(s) of

rejection presented in this Office action. Accordingly, **THIS**

ACTION IS MADE FINAL.   See MPEP § 706.07(a).   Applicant is

reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action
is set to expire THREE MONTHS from the mailing date of this
action. In the event a first reply is filed within TWO MONTHS of
the mailing date of this final action and the advisory action is
not mailed until after the end of the THREE-MONTH shortened
statutory period, then the shortened statutory period will expire
on the date the advisory action is mailed, and any extension fee
pursuant to 37 CFR 1.136(a) will be calculated from the mailing
date of the advisory action. In no event, however, will the
statutory period for reply expire later than SIX MONTHS from the
mailing date of this final action.

7.   **Any response to this final action should be mailed to:**

> **Box AF**
> Commissioner of Patents and Trademarks
> Washington, D.C. 20231

> **or faxed to:**

> (703) 308-6306

> **Or:**

> (703) 308-6296

> For formal communications, please mark "EXPEDITED
> PROCEDURE".

> For informal or draft communications, please label
> "PROPOSED" or "DRAFT" on the front page of the
> communication, and do NOT sign the communication.

> Hand-delivered responses should be brought to Crystal
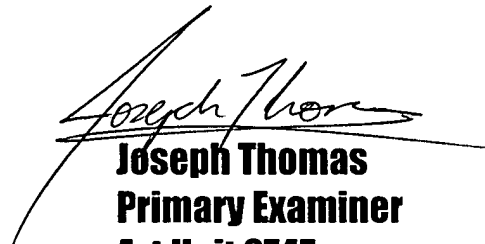> Park II, 2021 Crystal Drive, Arlington. VA., Sixth
> Floor (Receptionist).

8.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Thomas, whose telephone number is (703) 305-9588. The examiner can normally be reached on Monday through Thursday from 8:30 AM to 5:00 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner are unsuccessful, the examiners' supervisor, Forester W. Isen, can be reached at (703) 305-4386.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

jt
June 2, 2000

Joseph Thomas
Primary Examiner
Art Unit 2747